

Integumentary System Case Study

Tanya's Case: Deadly Flames

OVERVIEW:

Tanya, an 8-year-old Hispanic female, is in transport by an ambulance to the emergency room (ER) after being rescued from her burning house. She was asleep at night when a spark from a cigarette started a fire, leaving her trapped in her bedroom. By the time the fire rescue squad arrived and got her out, she had suffered severe injuries.

GOALS:

1. Identify **subjective** and **objective** data in a complex scenario.
2. Create an aligned, thoughtful, and evidence-based **plan**.

ROLE:

You are the trauma team in the burn unit at the regional hospital. Your team is composed of a variety of healthcare providers including an **ER technician** who is interested in the prevention of infection, a **paramedic** who has lots of experience with patients going into shock, an **emergency medicine physician** who specializes in burns, and an **ER nurse** who has years of experience helping in pain management for children.

OBJECTIVE:

Obj. 14.1: Identify the structures, functions, and pathophysiology of the integumentary system.

DELIVERABLE:

- 1) SOAP Note with Pre-Assessment Guiding Questions
- 2) Informal Presentation

ASSESSMENT CRITERIA:

Subjective & Objective Sections: 1) organized & recorded clearly & accurately; 2) info is aligned with appropriate section and question; 3) key points summarized

Plan Sections: 1) comprehensive (includes physical, social & mental health); 2) aligned to facts of the case; 3) evidence-based; 4) addresses short- & long-term



Health Care Provider Roles:

Determine the role of each team member. Then share at least one other interest related to health and/or this particular case scenario.

Team Member	Role	Specialty...	Also interested in...
	ER technician	Prevention of infection	
	Paramedic	Treatment of Shock	
	Emergency Medicine Physician	Treatment of burns	
	ER nurse	Pain management for children	

Case Study Steps:

_____ 1. Review the coversheet information carefully. Ask questions to clarify your challenge.

_____ 2. Assign team roles. Discuss what how you will carry out these roles to make an effective team.

_____ 3. Listen to Clip 1, recording all information into the **Subjective** & **Objective** sections; repeat for Clip 2.

_____ 4. Complete the *Pre-Assessment Guiding Questions*.

_____ 5. Write out your SOAP **Assessment**, including an estimate of the extent and severity of Tanya's burns.

_____ 6. Research information on the care and treatment of severe burns and associated health issues.

_____ 7. Create a **Plan** for Tanya's treatment addressing the care she will receive within: (1) 1 hr; (b) 24 hrs; (c) 1 wk

_____ 8. Prepare an informal presentation of Tanya's Assessment & Plan to present during "Rounds."

Paramedic Calls Transcript:

Clip 1:

Paramedic: This is Unit 701. We have an 8-year-old female who has suffered from severe burns to her lower extremities, hands, and abdomen and minor flash burns to the face following a house fire. Burns appear gray-white with red, blistered borders. Patient just regained consciousness, but disoriented and verbally unresponsive. Vitals are unstable with blood pressure = 60 / 40; heart rate = 165 [beats / min].; and respiratory rate = 35 [breaths / min]. Medications and allergies are unknown. Medical history also unknown. Parents are in transit to the hospital, but no family members were present upon our arrival. Estimated arrival at UIC Burn Unit in 10 minutes.

Clip 2:

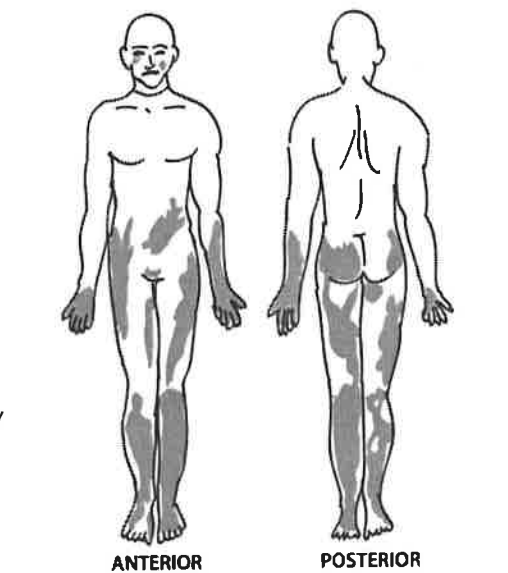
Paramedic	Tanya
"How are you feeling now?"	"It hurts."
"Can you tell me your name?"	"Tanya."
"Tanya, do you know where you are?"	"On an ambulance?"
"Do you know what day it is?"	"I don't remember"
"Tanya, do you remember what happened?"	"There was a big fire and I couldn't get out"
<i>Patient is alert & oriented (Person, Place, Time & Event) so paramedic moves on to SAMPLE history.</i>	
"Tanya, my name is Mike and I'm going to help you while we go to the hospitals so the doctors can take care of you. That means I'm going to have to ask you some more questions and continue to check that you're doing ok by taking your blood pressure and pulse rate every few minutes. Is that ok?"	"Yea."
"Tanya, do you know if you are allergic to anything, like any medicines?"	"I don't know"
"Ok. Do you take any medicines?"	"No, only when I had an ear infection, but that was a long time ago."
"Do you remember the last time you ate something?"	"I had macaroni and cheese for dinner."
"Do you remember what happened before you were in the ambulance?"	"I was sleeping and I woke up very hot and sweaty and it was all smoky. I tried to run out of my room to find my brother and the fire was really hot and I got burned, so I went back to my room and hid in the closet. But then I don't remember."
<i>The paramedic has obtained the SAMPLE history and now moves on to an evaluation of the pain from Tanya's burns using the FARCOLDER method of interviewing.</i>	
"Tanya, I'd like you to tell me how you're feeling now. First, can you tell me where it hurts?"	"It hurts the most on my hands, but my tummy hurts too and different parts of my legs."
"Can you describe what the burn on your right hand feels like?"	"I can't feel it in the middle, but it stings around the outside, by my wrist."
"Tanya, does anything else bother you right now besides the pain from where the fire touched you?"	"It's just a little hard to breath."
"Thanks Tanya. You're a really brave girl and we're going to make sure you get all better, ok? Just hang in there we're almost there."	"Ok."
<i>Note: The paramedic skipped some of the categories that did not apply to the burn situation, including Frequency, Radiation, Onset, Duration, Exacerbating and Relieving factors)</i>	

SOAP Note**Subjective:****Signs & Symptoms****Allergies****Medications****Past medical history****Last oral intake****Events leading to injury or illness****Frequency****Associated Symptoms****Radiation****Character****Onset****Location****Duration****Exacerbating Factors****Relieving Factors****Objective:****Measurements****Vital Signs****Exam Results****Lab Results**

Pre-Assessment Guiding Questions:

1. Describe the difference between 1st, 2nd, & 3rd degree burns & explain the importance of the "Rule of Nines."

2. As you examine Tanya, her burns follow the pattern in the diagram. Gray areas represent the burns. A detailed estimate of the qualitative and quantitative characteristics of her burns is necessary for your **Assessment**. Estimate the **severity** (1st, 2nd, or 3rd degree) and **extent** (using Rule of Nines).

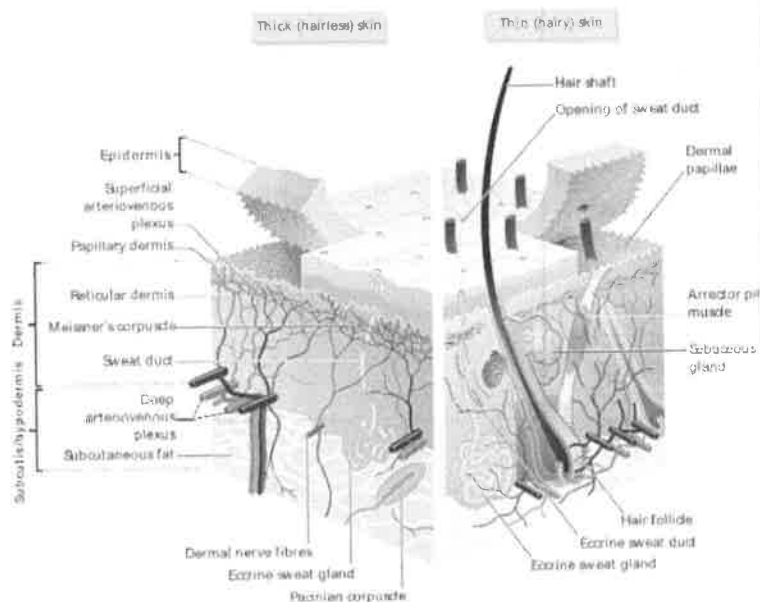


3. What are the main functions of the integumentary system?

4. Given what you know about Tanya's burns, which **2-3 functions of the skin** are most in danger?

5. Given the major threats to the body upon severe burning, list the **top 2-3 concerns** you have for Tanya.

6. Given the **severity** of Tanya's burns, label or note which structures of the skin may be damaged.



Credit: Wikimedia Commons (User: Madhero88)

Assessment:**Summary****Differential Diagnoses****Final Diagnosis***Claim (Diagnosis):**Evidence:**Reasoning:***Plan:****Steps of Plan**

(Consider mental, social and physical health; short- and long-term needs, and follow-up care required)

Research:

Team Member	Research Focus	Notes from Team Member

ROUNDS: Informal Patient Presentation

Tanya is transferred to the pediatric intensive care burn unit. The healthcare team completes "rounds" for each patient in this unit each morning. This process involves a verbal report of the patients status, treatment plan, and progress, followed by a team discussion of what adjustments to the course of treatment or next steps of the plan should be made. It is an interactive dialogue, involving doctors, nurses, social workers, dietitians, specialists, and sometimes even other health care professionals. The parents are often present as well for part or all of the meeting.

It is the morning after Tanya was brought in. Prepare for a brief summary of Tanya's condition, current treatment plan, and progress. You may decide how her case is progressing and determine all relevant details. Be sure each team member completes a portion of the patient presentation and be ready to share with the class!

Team Member	Focus Area	Presentation Notes